CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/CEMENT/2016-17 Date: 06.01.2017

TEST REPORT ON CEMENT

* Customer	:	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	:	Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	:	Cement – Sample 2
Sample Received on	:	05.01.2017
Period of Testing	:	05.01.2017 to 06.01.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	30.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	175 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	490 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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VIDYARANI P.K.
Technical Manager

#23/14, 7th Cross, 3rd Stage, 4th Block, Shakthi Ganapathi Nagara, Basaveshwaranagar, Bangalore-79.
Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/SAND-Gradation/2016-17 06.01.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	: Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	: Fine Aggregates - Sample 2
Technical Reference	: IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	: 05.01.2017
Date of Testing	: 06.01.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	95.50	90-100	90-100	90-100	95-100
2.36	79.50	60-95	75-100	85-100	95-100
1.18	57.00	30-70	55-90	75-100	90-100
600 Micron	24.50	15-34	35-59	60-79	80-100
300 Micron	16.00	5-20	8-30	12-40	15-50
150 Micron	4.00	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Technical Manager

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Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/AGG/GR/2016-17 06.01.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	: Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	: Coarse Aggregates (40mm) - Sample 2
Technical Reference	: IS : 2386 (Part 1) -1963 (RA-2016)
Sample Received on	: 05.01.2017
Date of Testing	: 06.01.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2016)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.22	95-100	85-100
20	44.44	30-70	0-20
10	26.44	10-35	0-5
4.75	1.32	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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Technical Manager

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Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/CC Solid Block/2016-17 06.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF SOLID CONCRETE BLOCKS

* Customer	:	**Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	:	Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
Technical Reference	:	IS: 2185 (Part 1) - 2005
Size of Blocks	:	400mm x 200mm x 200mm
Cross Sectional Area	:	80000 mm^2
No. of Blocks Tested	:	08
Sample Received on	:	05.01.2017
Date of Testing	:	06.01.2017

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS 2185 (Part 1) - 2005
1	Block 1	36.3	259.6	3.25	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	34.38	262.3	3.28	
3	Block 3	35.19	263.8	3.30	
4	Block 4	36.35	262.5	3.28	
5	Block 5	35.19	260.8	3.26	
6	Block 6	36.35	262.5	3.28	
7	Block 7	34.18	263.8	3.30	
8	Block 8	35.26	265.4	3.32	

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Tele Fax : 23223227, Website : www.civiltechconsultants.com
E-mail : vishwanath.ia@civiltechconsultants.com / info@civiltechconsultants.com

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Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/C.C.Core/2016-17 06.01.2017

TEST REPORT ON CONCRETE CORE

* **Name of Customer** : **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* **Name of Agency** : **Technical Manager (West),** KRIDL, Bangalore.
* **Name of work** : Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* **Reference** BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
Techinical Reference : IS:516-1959 (Reaffirmed 2008), SP-24:1983
Sample ID : Kerb Stone
Sample Received on : 05.01.2017
Date of Testing : 06.01.2017

Sl. No.	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	78.00	0.386	2520.36	1.56	0.952	24.20	12.32	13.31	13.98	17.47
2	50.00	80.00	0.399	2540.11	1.60	0.957	25.80	13.14	14.19	13.58	16.97
3	50.00	79.00	0.390	2514.25	1.58	0.955	26.30	13.39	14.47	13.81	17.26

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Technical Manager

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Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/Cube/2016-17

19.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of the work	: Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	: Cement Concrete
Technical Reference	: IS: 516-1959 (RA-2013)
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 7^{th} day
Sample Received on	: 19.01.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	12.01.2017	19.01.2017	8.135	248.9	11.06
2	12.01.2017	19.01.2017	8.228	254.7	11.32
3	12.01.2017	19.01.2017	8.379	273.5	12.16

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19.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of the work	: Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	: Cement Concrete
Technical Reference	: IS: 516-1959 (RA-2013)
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 7^{th} day
Sample Received on	: 19.01.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	12.01.2017	19.01.2017	8.193	268.9	11.95
2	12.01.2017	19.01.2017	8.265	273.6	12.16
3	12.01.2017	19.01.2017	8.307	289.6	12.87

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of the work	: Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	: Cement Concrete
Technical Reference	: IS: 516-1959 (RA-2013)
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 7^{th} day
Sample Received on	: 19.01.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	12.01.2017	19.01.2017	8.115	368.9	16.40
2	12.01.2017	19.01.2017	8.229	329.7	14.65
3	12.01.2017	19.01.2017	8.379	355.8	15.81

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Job No.: CTCE/BBMP/W.No.02/KRIDL/CSR-01/238a/Cube/2016-17 23.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	: **Asst. Executive Engineer,** Yelahanka Sub Division, BBMP, Bangalore.
* Agency	: **Technical Manager (West),** KRIDL, Bangalore.
* Name of the work	: Construction of Culverts and Improvements of drains at Vinayaka Layout in Ward No.02 of Yelahanka Sub Division, BBMP, Bangalore.
* Reference	: BBMP/EE(YNK.D)/W.O/99/2016-17 Dated: 05.01.2017
* Sample ID	: Covering Slab Drain Concrete
Technical Reference	: IS: 516-1959 (RA-2013)
Size of cubes	: 150mmx150mmx150mm
Cross Sectional Area	: 22500 mm^2
* Grade of Concrete	: M_{15}
Compressive Strength as on	: 7^{th} day
Sample Received on	: 23.01.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	16.01.2017	23.01.2017	8.155	325.8	14.48
2	16.01.2017	23.01.2017	8.279	338.9	15.06
3	16.01.2017	23.01.2017	8.368	354.6	15.76

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